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Dear Sir:

Some 30% has been cut from the 1954 atomic energy budget, according to Representative W. Sterling Cole, chairman of the Joint Congressional Committee on Atomic Energy. The cuts will apply to the $1,996,789,000 which President Truman had requested from Congress for the USAEC for the 1954 fiscal year, as well as additional contract authority, or to a total of approximately $2.7 billion. These reductions will mean elimination of certain programs, including the development of nuclear power-propelled aircraft, as well as propulsion of surface naval vessels. Consequently, this will delay experiments looking to the industrial use of nuclear energy. Since the costs of the eliminated programs constitute the larger part of the budget cut, proposed economies in actual operations of the USAEC, including the manufacture of atomic weapons and fissionable materials, will be in the neighborhood of 12%. Construction of the two types of nuclear propulsion units for underseas craft "will be pushed to completion", Mr. Cole said. There will be no curtailment of the USAEC's new gaseous diffusion plant (to produce uranium-235), now being built near Portsmouth, Ohio, although earlier reports had said restrictions might apply there.

The ninth and tenth nuclear detonations at the Las Vegas, Nev., proving ground in the last fortnight included another nuclear device detonated from a 300-ft. tower, and a nuclear weapon shot from a cannon. This is believed to be the first time that a nuclear weapon has been fired from a cannon. The Army used for this purpose its new 280-mm. cannon, which has been specially designed to handle the nuclear weapon. Fired by remote control, the shell, with a nuclear warhead, traversed some 7-miles. Explosion of the nuclear weapon was accomplished by a time mechanism.

A conference in the last fortnight at the University of Michigan covered research achievements in the constructive uses of atomic energy; papers were by H. R. Crane, physics department, on "The Atom: Tool for Discovery"; Isadore Lampe, department of roentgenology, on "Modern Radio-Therapy in Cancer"; and H. J. Gomberg, on "Nuclear Energy in Industry".....At the University of Wisconsin, in the last fortnight, a three-day nuclear technology institute was held by that University's department of engineering. Prof. J. C. Weber covered basic nuclear concepts; Prof. E. A. Farber, heat transfer; Prof. J. E. Willard, production and properties of radioactive tracers; and Prof. W. W. Beeman, radiological effects of atom bombing. Mr. E. F. Brill, chief engineer, atomic power section, Allis-Chalmers, discussed technical considerations in the development of nuclear power plant equipment. Mr. R. M. Ball, chief engineer, Nuclear Instrument & Chemical Corp., described new tools for the engineering profession; and M. H. Gottlieb, Bjorksten Research Laboratories, discussed industrial and a biological applications of radioactive isotopes as tracers.

An advanced course covering the clinical applications of radioisotopes will be given by the Oak Ridge Institute of Nuclear Studies, Sept. 14-25, 1953.

Subscription rates: United States, U.S. possessions, and Canada, $18.00 a year. Latin America, $20.00 a year. All other countries, $25.00 a year.

BUSINESS NEWS...in the nuclear field...

Feed Materials Production Center Nears Completion- With some portions of the plant already in operation, the USAEC's Feed Materials Production Center, near Fernald, Ohio, is nearing completion. Operated for the USAEC by National Lead, the FMPC is a series of plants which convert raw uranium ore into highly pure uranium metal in various shapes.

The Catalytic Construction Co., Philadelphia, has been the architect-engineer contractor on the plant, with the George A. Fuller Co., New York, the construction contractor. While originally estimated to cost approximately $30 million, additions and expansion of facilities during planning have brought the figure close to $78 million. Of this total, Catalytic Construction costs will be approximately $30.4 million, and George A. Fuller Co.'s about $47 million.

In building the FMPC (in common with many other atomic energy plants) a considerable part of the facilities and equipment were specially designed, as they were not available on the market. Catalytic Construction handled this special process procurement, and utilized over 1,200 vendors in so doing. Among these vendors were the Birdsboro Steel Foundry and Machine Co., Birdsboro, Pa. which designed and manufactured for the FMPC a precision mill for rolling uranium ingots into bars in production quantities. Special conveyors were supplied by Hapman Conveyor Co., Kalamazoo, Mich., and Honan Crane Corp., Lebanon, Ind. Tanks and vessels were purchased from Sun Shipbuilding & Drydock Co., Chester, Pa., Alloy Fabricators, Perth Amboy, N.J., Metal Weld Corp., Phila., Pa., and Derkiss Fabricators, Inc., Linden, N.J. Furnaces were obtained from National Research Corp., Boston, Mass., and Pacific Foundry, N.Y.C. General Electric Corp., N.Y.C., and F.D. Lawrence Co., Cincinnati, O., supplied power centers and control centers, and Riley Stoker Corp., Phila., Pa., supplied boilers. Electric motors were purchased from Continental Electric Co., Phila., Pa., and U. S. Electrical Motors, Inc., Phila., Pa.

Almost 300 sub-contracts were let by the Fuller Co., to meet FMPC needs. Hanley & Co., and Michael Harmonay Corp., of Chicago and New York, are procuring and installing piping, plumbing, and sheet metal fixtures. Fishbach and Moore, Inc., N.Y.C., are doing the electrical work. Major structural steel erection contracts were awarded to Karl Koch Structural Steel Erecting Co., Bronx, N.Y., Crawford Steel Erection Co., Cincinnati, O., George Rehm Co., Cincinnati, O., and Whitehead & Kales, River Rouge, Mich.

Current operating personnel at the FMPC total 1187. The current construction employment figure is 1237.

Nuclear Power Reactor Technology Reports Available- The declassified versions of reports made to the USAEC by four separate groups of non-governmental industrial representatives, who spent a year appraising the prospects for private economic generation of nuclear power, have now been made available.

These declassified versions represent only about one-fourth to one-third of the bulk of the classified reports made by the four groups: Commonwealth Edison & Public Service of No. Ill.; Dow Chemical & Detroit Edison; Monsanto Chemical & Union Electric; Pacific Gas and Electric & Bechtel Corp.

The reports call attention to the many different reactor designs that might be followed. Each group settled on a different reactor type as holding most promise from the group's point of view. While the report of the Detroit Edison-Dow Chemical group considers the problem in general and economic terms without outlining specific plant designs, the other three reports describe specific designs involving considerable construction detail.

All four groups concur in the belief that dual-purpose reactors are technically feasible, and could be operated in such a manner that the plutonium credit would reduce the cost of the power. Conversely, the report points out, all agree that no reactor could be constructed in the very near future which would be economic on the basis of power generation alone.

Concerning significant engineering topics, the reports bring out that the value to industry elements of the information released is not in the detail of reactor design or construction, but in the coordination of the reactor with the suggested arrangements for producing electric power.

Because of security, however, the reports do not show a balanced picture. Very little specific reactor design, and economic data, could be included. The reports are, for that reason, able to give but a fragmentary survey.

NEW PRODUCTS, PROCESSES & SERVICES...in the nuclear field...

FROM THE MANUFACTURERS-Analysis kit, model L-75KA, for atomic civil defense operations, and for general field use. Said to do a quick and accurate job of checking contamination of water and food supplies. The kit is entirely self contained, and is not dependent on outside sources of light, power, or other facilities. The limit of sensitivity of the analysis unit is 300 to 3000 times lower than the contamination limits that have been set as safe on a 10-day and 30-day emergency basis by the Federal Civil Defense Administration. This permits accurate measurements to be made rapidly. The kit consists of an analysis unit, a battery operated light source, a supply of polystyrene and aluminum dishes for large and small liquid samples and dry ashed samples, a quantity of copper planchets and planchet holders, a set of three aluminum filters, and a handbook of instructions. A carrying case houses the lot. The handbook contains curves which give the percent of transmission for each filter for the beta rays of fission products from the first to the tenth day after the nuclear event.....New roentgen meters; a refinement of this manufacturer's patented midget type pocket chamber. Furnished in a set consisting of three meters, with ranges of 500 mr, 5 r, and 50 r, and a specially adjusted charger reader. Recommended for atomic civil defense operations and other types of field use. Accuracy said to be plus-or-minus 3%.--Landsverk Electrometer Co., Glendale 4, Calif.

Iridium radiography sources, for non-destructive testing of steel from ¼" to 1". The sources will provide 2% definition in such steel, and also give good results when used on aluminum and magnesium, the company states. The average gamma energy of this iridium-192 is about 450 KEV. Standard sources strength is 1.25 curies; other strengths are supplied on special order.....New carbon-14 labeled compounds for use in monomolecular layer studies, flotation studies, and research in the soap and oil fields. These compounds: lauric acid-1-C-14, and stearic acid-1-C-14 have a specific activity of 1.0 millicurie per millimole.....Added to this manufacturer's list of labeled amino acids is dl-Aspartic acid-C-14.--Tracerlab, Inc., Boston 10, Mass.

NOTES- Beckman Instruments, Inc., manufacturer of nuclear and industrial instruments, is transferring its New York offices to a new 20,000 sq.-ft. plant at Mountainside, N.J. The new structure will serve as northeast sales and service headquarters for the South Pasadena, Calif., parent company, and also will provide a branch manufacturing facility for Beckman's Helipot division.

NEW BOOKS & OTHER PUBLICATIONS...in the nuclear field...

Reports to the USAEC on Nuclear Power Reactor Technology. Declassified version of reports made by four industry teams of prospects for economic nuclear power. (Dealt with in this LETTER at length, this issue; see BUSINESS NEWS). 94 pages.--Superintendent of Documents, Wash. 25, D. C. (25¢)

Transcript of Symposium on Atomic Energy held by National Industrial Conference Board. This conference, in Oct., 1952, heard non-technical discussions of atomic energy in various fields. This transcript contains these talks, which were non-technical in nature.--National Industrial Conference Board, 247 Park Ave., New York, N.Y. ($10)

Shock Tube Tests of Glazing Materials, by W. J. Taylor and R. O. Clark, Ballistic Research Laboratories, Aberdeen, Md. Since the hazard of flying glass during an atomic attack may extend over approximately 200 square miles, this report shows that proper glazing material could reduce this hazard. 37 pages.--Office of Technical Services, U. S. Dep't. of Commerce, Wash. 25, D. C. ($1)

Fission Products for Insect Control, by C. C. Hassett and D. W. Jenkins, Medical Laboratories, Army Chemical Center, Md. Part of a test program to utilize radioactive wastes. 19 pages.--Library of Congress, Publication Board Project, Wash. 25, D. C. (Microfilm: $1.75; Photostat: $2.50).

Simple R.F. Heat Sealing Device for Thin Plastic Containers. 15 pages..... Design of Mass Flowmeters for Large Flows. 13 pages. 65¢.....Fast Coincidence Circuit for Experiments with High Energy Particles. 40¢. 8 pages.....Reports of the Atomic Energy Research Establishment, Harwell, Eng.; may be obtained from British Information Services, 30 Rockefeller Plaza, New York 20.

RAW MATERIALS...radioactive minerals for nuclear work...

UNITED STATES- A list of qualified umpire analysts, available to buyers and sellers of uranium ores in the Colorado Plateau area, and who have been certified by the USAEC to conduct such analyses on a commercial basis, has now been established. These firms include: Brown Laboratory, Redlands, Grand Junction, Colo.; Smith's Laboratory, Moab, Utah; and LeDoux & Co., Inc., 155 Sixth Ave., New York 13. In addition, processing companies that purchase uranium ores are now posting similar lists of umpire analysts acceptable to them. These lists are posted by Climax Uranium Co., at its plant located at Grand Junction, Colo.; U. S. Vanadium Co., at its plants located at Rifle and Uravan, Colo., and Thompsons, Utah; Vanadium Corp. of America, at its plants located at Durango and Naturita, Colo.; and Vitro Chemical Co., at its plant located at Salt Lake City, Utah. This now makes available to uranium miners and ore processors the opportunity to utilize the analytical services of private assay offices which have demonstrated their ability to furnish consistently accurate results.

CANADA- A uranium staking rush of some proportions is now underway approximately 85 miles north of Ottawa, near the town of Maniwaki. A firm now active there is Cobalt Consolidated Mining Corp., which has teamed up with Silanco to work a showing required in the area. The presence of the mineral uraninite has definitely been established there.....Nesbitt-LaBine Uranium Mines have made plans to deliver ores to Eldorado Mining and Refining's mill when the custom ore section is placed in operation, according to G. A. LaBine, president, in the company's annual report. Some 320-ft. of ore length, averaging 0.33% uranium oxide over 3.0-ft., in addition to numerous minor pitchblende-bearing fractures, were opened up at the company's Eagle-Ace development, during the year.....An orebody with a gross value estimated to be well in excess of $65 million has been indicated by diamond drilling on the "A" zone at Gunnar Gold's uranium property, the company's annual report has disclosed. In addition to this zone, where drilling is currently being concentrated, several other radioactive zones have been discovered on the company's uranium properties; these are to be explored.

SOUTH AFRICA- The Union's second uranium refining plant was opened in the last fortnight at the Daggafontein gold mine. South Africa is now a large supplier of uranium, according to Sir Ernest Oppenheimer, chairman of Anglo-American Corp., Ltd., which controls Daggafontein.

NUCLEAR WORK OUTSIDE THE UNITED STATES...news & notes...

GREAT BRITAIN- A plan for transferring responsibility for atomic energy from the Ministry of Supply to a non-departmental organization is now being devised. A committee, consisting of Lord Waverly, Sir Wallace Akers, and Sir John Wood, are making a study of the proposal. In justifying this step, Prime Minister Churchill stated that considerable strides had been made in the development of methods for using atomic energy for industrial purposes, and the new step was necessary to secure the most rapid and economical development of atomic energy, both military and industrial. He said that the form of non-departmental organization appropriate in this case would differ from any existing model: overall policy must remain firmly in the hands of the Government and the method of financial control would have to be closely studied since for some time to come almost the whole of the cost would have to be met from public funds.

CANADA- A new two year union-management agreement has now been signed by Atomic Energy of Canada, Ltd., and Atomic Energy Allied Council, A. F. L., according to officials of the organizations involved. In the agreement, the company, which operates Canada's atomic energy project near Chalk River, Ont., "recognizes the 40-hour week for day workers and the 42-hour week for shift workers as the goal". Effective immediately, the day workers had their week reduced from 45 hours to 42½ hours, and the shift workers had their week reduced from 48 hours to 45. The Atomic Energy Allied Council, A. F. of L., was specially organized by union officials to represent the locals of eight International unions at the Chalk River plant. These locals existed when the plant was operated by the National Research Council, but were not officially recognized, though there was a system for union-management discussions.

ATOMIC PATENT DIGEST...latest U. S. grants & applications...

GRANTS MADE- Radiation exposure meter. Comprises, in part, a supporting barrel, an electrometer mounted within this barrel, and a microscope and a scale mounted in the barrel for observing and measuring the position of this electrometer. U. S. Pats. No. 2,638,551 & 2 issued May 12th, 1953; assigned to Keleket X-Ray Corp. (Inventors: O. G. Landsverk and L. E. Rasmussen.)

Implement for use in chemical apparatus. In apparatus for filling receptacles with a material that tends to decompose upon contact with ordinary atmospheric air, and for hermetically sealing the receptacles so filled, the combination of (in part); a pair of relatively rotatable, superposed plates having aligned apertures forming a receptacle filling station, and with specially disposed apertures forming a receptacle filling station, and with provision for introducing the material into a receptacle positioned at the filling station, and for simultaneously sealing hermetically another receptacle at the sealing station, which has been previously filled with a desired quantity of the material. U. S. Pat. No. 2,639,074 issued May 19, 1953; assigned to United States of America (USAEC). (Inventor: C. H. Prescott, Jr.)

Pocket ionization chamber. A gamma and X-ray responsive pocket chamber. Comprises, in part, a condenser having a hollow cylindrical plate, an insulator disk within and at right angles to the longitudinal axis of the cylindrical plate, with this insulator being attached at its peripheral edge to the interior wall of the plate, and with a cylindrical charge collecting electrode plate disposed within this hollow cylindrical plate. (The hollow plate and the charge collecting electrode plate are composed of substantially air-wall equivalent material.) The charge collecting electrode is secured to the disk coaxially with the plate, with means also provided for closing the ends of this hollow plate. U. S. Pat. No. 2,639,389 issued May 19th, 1953, to O. G. Landsverk.

Radiation detecting device. A radiation counter of the type comprising a gas-filled discharge chamber, wherein the radiation traversing the discharge chamber produces voltage pulses. The intensity of the radiation is indicated by the frequency of these pulses. A D.-C. voltage source is used for the discharge chamber, with control means for this voltage source coupled to the discharge chamber and operating to vary the D.-C. voltage output of this voltage source responsively to changes in the magnitude of the pulses. U. S. Pat. No. 2,639,390 issued May 19th, 1953, to S. A. Scherbatskoy.

APPLICATIONS- System for detecting and neutralizing toxic gases, such as phosgene, which may escape from processing or other equipment, and cause a health hazard. In the system, a steam ejector draws a discharge sample from the exhaust stack being monitored, and feeds it to a water absorption tower where the continuous supply of water thereto provides a counter current flow. The water supplied to the tower for absorbing the toxic gases from the air sample is of constant pH. A pH cell is so connected in this system that it received the discharge from the tower and measures the pH thereof. A pH control operates in response to the action of pH cells in the system to actuate an ammonia injection valve which discharges ammonia gas from an ammonia vapor source into the ventilation stack to neutralize the toxic gases. Application number 65,691 made to U. S. Pat. Off. Dec. 16th, 1948. Assigned to United States of America (USAEC). (Inventor: R. J. Schrader.)

PEOPLE...in the atomic program...

Cyrus S. Ching, former director of the Federal Mediation Service, has been picked by President Eisenhower to head a new six-man atomic energy labor disputes panel, according to informed sources in Washington. Two others who are said to have been asked to serve are former Wage Stabilization Board members: Profs. George Taylor, University of Pennsylvania, and Arthur Ross, University of California. The panel will attempt to prevent labor disputes from arising in U. S. atomic energy installations. Its first move may be a request for a no-strike pledge from unions at these installations.

Sincerely,

The Staff
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